

Date: 09 Nov 2023
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From: "WETLANDS" claire.argote@springer.com
Subject: Your Submission WELA-D-23-00028R1

Dear Ms. Lane,

I have received the reports from our advisors on your manuscript, Plant community compositional stability over 40 years in a Fraser River Estuary tidal freshwater marsh, and have decided that your manuscript can be accepted for publication after you have carried out the corrections as suggested by the reviewer(s).

Below, please find the reviewers' comments for your perusal.

You are kindly requested to also check the website for possible reviewer attachment(s).

Please submit your revised manuscript online by using the Editorial Manager system.

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I look forward to receiving your revised manuscript before 24 Dec 2023.

Please make sure to submit your editable source files (i.e. Word, Tex)" in all the below revision decision letters.

With kind regards,
Marinus L. Otte, Ph.D.
Editor in Chief

Comments from the Editor:

Reviewer #2: Thank you for your careful consideration of my comments.

I would recommend to increase the size of the font in Fig. 1 for better legibility.

I am still a bit puzzled by the comments of the authors, that small elevational gradients don't lead to zonation, but appreciate that the authors will know their study area well enough to confidently make this statement.

Reviewer #3: The clarification of the hypotheses and methods helped to clarify the text and the goal of the paper.

In table S5 I think the actual values of mean cover would be easier for the readers than mean cover class values. Also in table S5 the dominant fescue is given as *Festuca arundinacea* but everywhere else it is given by its current name of *Schedonorus arundinaceus*.

Forcing a 3 group cut just to allow a semi-easier way to characterize the vegetation types in a paper about changing vegetation types does not make sense to me. To me the best way to approach the data as presented to would be to say there were 3 clusters identified in 1979 (I could see an argument for making 4 clusters by breaking sedge up), 4 clusters identified in 1999, and 3 clusters in 2019. Forcing the 3 cluster group in 1999 just because it facilitates retention of an old group name doesn't help to clarify and it does not seem overly burdensome to just explain what the data show. Something such as "Cluster analysis in 1999 suggest the presence of four clusters. Two of these clusters are similar to the sedge and bogbean types observed in all years. The remaining two clusters in 1999 are split from the fescue type observed in 1979 and 2019. The two subgroups of the fescue type were characterized by (I'm guessing fescue), and species Y. This distinction was not observed in 1979 or 2019."

Vegetation classification data and change over time is inherently messy and complicated and forcing things into predefined boxes clouds more than I think it helps. Another way to approach this would be to start as you have and say there were three vegetation groups and we are sticking with three groups regardless of anything (this is what you have done). Then organize your results with subheadings for each group and explain how cluster analysis suggests subgroups in each type depending on year and what those subgroups are. I would expect that those subgroups are transient as part of change occurring due to invasion or nuances of that particular year's environmental conditions. But this is important. There is clear general trend towards homogenization but there also appear to be differences between years in closely related types. If you don't break those out for some kind of discussion I think you are losing some of the information that is available here that could suggest potential further areas of study.

If there is a clear way to describe away the additional groups than that should be stated. Something like "In 1979 the data suggest the sedge group is composed of two different types but after looking at the data the separation seems to be due to the presence of Species Z which we don't think is warranted as its own group because of XYZ." And then something similar for 1999 fescue group.

I feel the paper would be strengthened by expanding the discussion of the results regarding the evaluation of spatial changes (begins on line 294) and moving Figure S2 into the main text. Figure S2 may also work better as a series of stacked bargraphs. If each type totals to 100% then you would want to clearly show how as one type lost abundance another type gained. In the text it would also be useful to discuss and compare the loss of one vegetation type on a transect as other type(s) increase. Are transects that are close to one another or that occupy similar positions in the marsh relative to main channels or other features displaying similar patterns? Something is clearly happening on transects U and V with Bogbean type being absent in 1999 and looking like it was replaced in Fescue type. Does this suggest a big change in hydrology? Temporary apparently? Was that a drought year?

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